

WHAT IS CLAIMED IS:

1. A circuit for reducing squeal comprising:
a battery supplying a battery output voltage;
a voltage sensor having an output dependent on said battery output
5 voltage;
an audio amplifier;
a cutoff circuit connected to substantially disable said audio amplifier in
response to said voltage sensor output; and
a crowbar circuit connected to load said battery with a circuit element in
10 response to said voltage sensor output.
2. The circuit of claim 1, further comprising:
a power supply having an input coupled to said battery, wherein said
power supply creates a modified voltage;
wherein said voltage sensor determines if said battery voltage is below a
15 threshold voltage by monitoring said modified voltage.
3. The circuit of claim 2, wherein said voltage sensor draws less than about
100 nanoamps of current from said power supply.
4. The circuit of Claim 1, wherein said voltage sensor comprises a voltage
divider.
- 20 5. The circuit of Claim 4, wherein said voltage divider comprises a resistor
in series with at least one diode.
6. The circuit of Claim 5, wherein said cutoff circuit and said crowbar
circuit each comprise a transistor with a gate connected to the circuit node connecting
said resistor and at least one diode.
- 25 7. A hearing aid comprising:
an audio amplifier having an input and an output;
a microphone connected to said input of said audio amplifier;
a speaker connected to said output of said audio amplifier;
a battery having an output voltage;

a cutoff circuit responsive to said battery output voltage and configured to substantially disable said audio amplifier in response to low battery output voltage; and

5 a crowbar circuit responsive to said battery output voltage and configured to load said battery with a loading circuit element in response to low battery output voltage.

8. The hearing aid of Claim 7, wherein said loading circuit element comprises a current source.

10 9. The hearing aid of Claim 8, wherein said current source is configured to draw approximately 500 microamperes from said battery.

10. The hearing aid of Claim 7, wherein said loading circuit element comprises a resistor.

11. The hearing aid of Claim 10, wherein said resistor has a resistance of about 1000 to 10,000 ohms.

15 12. A method for reducing squeal in a hearing aid comprising a battery and an audio amplifier, the method comprising sensing a low battery voltage and, in response thereto, substantially disabling said audio amplifier and loading said battery.

13. The method of Claim 12, wherein said substantially disabling comprises reducing amplifier bias current.

20 14. The method of Claim 12, wherein said sensing comprises sensing a power supply output voltage derived from a battery voltage.

15. The method of Claim 12, comprising loading said battery with a resistive element having a resistance of approximately 1000 to 10,000 ohms.

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